GORELIK, B.M., BUKHINA, M.F., RATNER, A.V., Prinimali uchastiye:, VASIL'YEV, O.B., KOROLEVA, V.M.

Investigating the compression of round section rubber rings and cylindrical specimens. Kauch.i rez. 19 no.2:23-28 F '60. (MIRA 13:6)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti. (Rubber--Testing)

15.9300
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66967

AUTHORS: Gorelik, B. M., Bukhina, M. F., Sazhenov, A. F. SOV/32-25-11-41/69

TITLE: Method for Measuring Contact Pressure in Compression of Rubber Samples Within a Wide Temperature Range

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 11, pp 1373-1375 (USSR)

ABSTRACT: The present test method was developed under the cooperation of Ye. D. Kurich and A. A. Lavrent'yev. A steel clamp of small dimensions (Fig 1) was desgined, in which the contact pressure is measured by means of resistance strain gauges. The clamp can be placed in a hermetically sealed cooling chamber, or in a thermostat. Several clamps of this type can be joined to the measuring apparatus, rendering possible simultaneous measurement of several samples. The measuring range is 1-200 kg for samples compressed by 10-90%. The tested rubber sample is pressed by a pressure plate against the center bit (a lamella 1.5-3 mm thick) of the clamp, the latter serving as dynamometer. The pressure is transmitted to the lamella by the sample, so that the deflection of the lamella indicates the elongation deformation, and the peripheric part of the lamella indicates the compression deformation. Measurement of these two

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S/138/60/000/002/006/009
A051/A029

AUTHORS: Gorelik, B.M., Bukhina, M.F., Ratner, A.V.

TITLE: An Investigation of the Compression in Circular and Cylindrically-Shaped Rubber Rings

PERIODICAL: Kauchuk i Rezina, 1960, No. 2, pp. 23 - 28

TEXT: The results of an investigation on the possibility of determining the elasticity of various rubber parts on the basis of the elastic properties of the rubber used are submitted. Several methods have been proposed by different authors (Refs. 1 - 17), the complexity of the problem, however, renders previous methods inadequate. They are suitable only for simple parts under low degrees of compression. Rings with a circular cross-section and cylindrical in shape were chosen in this investigation as the objects of study. It was proven experimentally that the hypothesis on the constancy of the average diameter of the ring under axial compression holds true. The elastic characteristics of the rubber rings and cylindrical parts under conditions of axial and radial compression within the limits of 5 to 7% deformation were determined. It was established that in calcu-

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A051/A029

An Investigation of the Compression in Circular and Cylindrically-Shaped Rubber Rings

lating the stress on the true area of contact a single curve of deformation is obtained for rings of various sizes under axial and radial compression. It is shown that the deformation characteristics of rubber rings under axial and radial compression follow the pattern of the deformation characteristics obtained under radial compression of the cylindrical samples limited at the end planes. Samples with a form factor (i.e., the ratio of the surface under stress to the free surface) of less or equal to 1, were chosen for the experiment, so that the elastic characteristics of the material could be determined rather than that of the sample and so that the effect of friction on the contact might be disregarded. The experimental method is described in detail and the sizes of the investigated rings and cylinders are listed. Figure 5 is the graph showing the overlapping deformation curves of the four investigated types of rubber with a hardness of 40-60 according to TM-2 (TM - 2) These curves can be used in estimating the relationship of the contact pressure to the degree of compression for a ring of any size made of rubber with a hardness of 40 - 60 according to TM - 2. O.B. Vasilyev

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S/138/60/000/002/006/009
A051/A029

An Investigation of the Compression in Circular and Cylindrically-Shaped Rubber Rings

and V.M. Koroleva participated in the work. There are 6 figures and 22 references: 10 Soviet and 12 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

Card 3/3

S/138/61/000/001/004/010
A051/A029

11.2314

AUTHORS: Gorelik, B. M., Bukhina, M. F., Ratner, A. V.

TITLE: The Change in the Contact Area in Deformation of Rubber Cylinders and Rings

PERIODICAL: Kauchuk i rezina, 1961, No. 1, pp. 12-17

TEXT: The dependence of the contact area of rings and cylindrical samples on the degree of compression was studied. The contact area of circular cross-section rings under conditions of axial compression and cylindrical samples under conditions of axial and radial compression within the limits of 5 to 80 % deformation was determined. The contact area did not depend on the hardness of the rubber. In cylindrical samples deformed in axial direction it is close to the values of the area of the true cross-section calculated from the condition of constant volume. The greatest difference between them (up to 20 %) was noted in compressions from 30 - 60 %, since the "barrel-shape" of the samples is at a maximum in these deformations. The data on the contact area were obtained by measuring the chalk marks left by the ring in axial deformation (Fig. 1, b) or by the cylindrical

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sample (Fig. 1, c, d, e) on the compressed steel plates processed to ∇^7. The relative contact area S^* was determined from the formula:

$$S^* = \frac{S_K}{S_0},$$

where S_K is the true contact area, S_0 is the initial area of the bearing surface for cylindrical samples deformed in the axial direction, or the area of the maximum longitudinal section for cylindrical samples deformed in the radial direction, and for rings. The degree of compression ε for samples loaded according to diagram e was determined in the usual way and in all the other cases according to the change of the section diameter:

$$\varepsilon = \frac{d_0 - h}{d_0},$$

where d_0 is the diameter of the section of the cylindrical sample or ring before deformation, h is the height of the cylindrical sample or ring in the deformed state. The relative change in the contact area for the rings under conditions of axial compression and cylindrical samples (free and limited at the ends) under conditions of radial compression is found to be the same. In

The Change in the Contact Area in Deformation of Rubber Cylinders and Rings

order to calculate the true value of the section area of the samples under compression in the absence of friction at the ends the following ratio based on the constant volume condition of the rubber in deformation is used:

$$\frac{S_{true}}{S_0} = \frac{1}{1-\varepsilon} \qquad (1).$$

Figure 3 shows the relationship of the relative area of contact to the degree of compression for samples compressed in the axial direction. Figure 4 shows that within the limits of accuracy of the experiment the curves of the relationship of the relative contact area to the degree of compression for rings and samples coincide for diagrams b, c and d. For samples deformed according to diagram d (Fig. 1) the width of the contact changes linearly within the limits of the ε change from 0.05 to 0.8 with an accuracy of 5 % and is described by the empirical formula:

$$\frac{d}{d_0} = 2\varepsilon + 0.15 \qquad (2),$$

where d is the width of the contact of the deformed sample, d_0 is the initial diameter of the sample. Experiments showed that equation (2) was true

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only for $\varepsilon \geq 0.05$. Figure 5 shows that equation (2) is valid for deformations of b and c at an ε change from 0.05 to 0.4. For $\varepsilon > 0.4$ the empirical formula would be:

$$\frac{d}{d_o} = (2\varepsilon + 0.15)^2 \quad (3).$$

No change in the length of the contact up to $\varepsilon = 0.4$ takes place, after which it corresponds to the formula

$$\frac{l}{l_o} = 2\varepsilon + 0.15, \text{ for } \varepsilon > 0.4 \quad (4),$$

where l is the length of the contact surface of the deformed sample, l_o is the length of the non-deformed sample. Since at $\varepsilon < 0.4$ the length of the contact is considered constant in all of the diagrams, the change in the contact area in deformation is described by the same equation as the change in the contact width:

$$S^* = \frac{S_K}{S_o} = 2\varepsilon + 0.15, \text{ for } 0.05 < \varepsilon < 0.4 \quad (5).$$

The Change in the Contact Area in Deformation of Rubber Cylinders and Rings

From formulae (2) and (4) for the length and width of the contact of the sample compressed according to diagram d an expression for describing the contact area is derived:

$$S^* = (2\varepsilon + 0.15)^2, \text{ for } \varepsilon > 0.4 \quad (6).$$

Figure 6 shows that the side surface of a compressed sample cannot be regarded in the same way as the surface of a circular cylinder when measuring the width of the sample (d_1) in deformation according to the load of diagram d. The values of the area of the transverse section and the volumes of a sample were calculated at different degrees of compression, resulting in a confirmation of the constancy of the volume. The authors point out that an accurate theoretical calculation of the relationship of the contact area and the shape of the side surface to the degree of compression under conditions of complex tension would be possible only when solving a three-dimensional problem for end deformations. There are 4 graphs, 1 diagram, 1 table, 1 photograph and 5 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

Card 5/11

30463

S/138/61/000/011/003/007
A051/A126

15.9300

AUTHORS: Gorelik, B. M., Bukhina, M. F.

TITLE: Rubber crystallization at low temperatures under compression

PERIODICAL: Kauchuk i rezina, no. 11, 1961, 11 - 15

TEXT: A study was conducted of the crystallization of compressed rubbers at low temperatures, with a change in contact pressure and regeneration. These parameters are subject to change at low temperatures and in the absence of crystallization, due to vitrification. Thus, a differentiation is made between changes caused by crystallization and those caused by vitrification. One of the characteristic features of crystallization is the relation of its rate to temperature, differing from that of the temperature relation in the vitrification process. Data obtained on the effect of the compression degree on the crystallization of rubbers revealed that thecrystallization rate sharply increases at a degree of compression over 50%. In non-crystallizing rubbers, the decrease in regeneration with a drop in temperature depends on the vitrification processes taking place. The relative residual deformation was computed according to the following formulae:

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Rubber crystallization at...

$$y = \frac{h_0 - h_2}{h_0 - h_1} \cdot 100\% \qquad (1)$$

where y is the residual deformation, h_0 - sample height before compression, h_1 - height of compressed sample, h_2 - sample height after release of compression load and regeneration. This calculation excludes the residual deformation (real and "apparent") occurring due to the following three factors: 1) vitrification processes, 2) relaxation processes of a reverse nature, 3) non-reversible processes in the deformed samples (creep). In the case of crystallizing rubbers, in order to exclude the action of the three listed factors from the general value of the residual deformation, the following must be estimated: 1) the value of the residual deformation after the short-term compression time at the given temperature (y_2), 2) the difference between the values of the residual deformation after a long-term (y_3) and short-term (y_4) compression time, at room temperature, i.e.,

$$y = y_1 - [y_2 + (y_3 - y_4)] \qquad (2)$$

[(y_1) is the crystallization temperature]. The effect of the composition on rubber crystallization was studied according to the given method. The difference between crystallizing and non-crystallizing rubbers with respect to the relation be-

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Rubber crystallization at...

tween regeneration and temperature at various compressions was determined. A sharp increase in the crystallization process with an increase in the degree of compression led to the development of a method for the rapid determination of crystallization, thus avoiding the measurements at low temperatures. An instrument constructed by the НИИРП (NIIRP) was used to determine the regeneration. The method of tension change in compressed rubber samples, at low temperatures, was used to investigate the crystallization process kinetics of rubbers under compression. An analysis of the results obtained showed that a change in the regeneration and the relative tension drop caused by crystallization are quite close. The advantage of using the crystallization determination method according to the tension drop lies in the possibility of observing the entire crystallization kinetics in one sample without removing it from its cooling chamber. The two given methods for determining crystallization help to determine the effect of the rubber composition on its tendency to crystallization; the effect of the deformation on the crystallization process; and they help to check the quality of the rubbers intended for use over long periods of time at low temperatures. There are 6 graphs and 10 references: 4 Soviet-bloc and 6 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: L. Radv, Briff, Ind. Eng. Chem., 46, no.11, 2439 (1954); E. W. Russel, Rubb. Chem. Technol., 25, vyp. 3, 397 (1952); S. D.

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30463

S/138/61/000/011/003/007
A051/A126

Rubber crystallization at...

Gehman, P. J. Jones, C. S. Wilkinson, D. E. Woodford, Ind. Eng. Chem., 42, no. 3, 475 (1950); A. N. Gent, Rubb. Chem. Technol., 28, vyp. 1, 36 (1955).

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (The Scientific Research Institute of the Rubber Industry)

Card 4/4

GORELIK, B.M.; ROGOVA, L.V.

Developing a method for the rapid determination of the efficiency of rubber-metallic plate-type shock absorbers during their aging. Kauch.i rez. 20 no.5:32-38 My '61. (MIRA 14:5)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber goods—Testing)

GORELIK, B.M.; BUKHINA, M.F.; KAPSHTYK, V.I.; RATNER, A.V.; MAYOROVA, A.S.

Rubber sealing rings. Standartizatsiia 25 no.3:49-50 Mr '61. (MIRA 14:3)

(Gaskets—Standards)

GORELIK, B.M.; GANELINA, S.A.; TIKHONOVICH, L.V.

Ways of increasing the durability of a turbodrill bearing disc. Neft. khoz. 39 no.5:16-20 My '61. (MIRA 14:9)
(Turbodrills)

GORELIK, B.M.; BUKHINA, M.F.

Effect of the degree of compression of rubber on the residual deformation and contact stress. Kauch. i rez. 20 no.9:22-26 S '61. (MIRA 15:2)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber, Synthetic--Testing)

34942
S/138/62/000/003/006/006
A051/A126

15.930

AUTHORS: Gorelik, B.M., Ratner, A.V.

TITLE: Objective measurement of rubber hardness

PERIODICAL: Kauchuk i rezina, no. 3, 1962, 41 - 43

TEXT: The TM-2-19 (TM-2-19) instrument has been designed for objective measurement of rubber hardness under constant load, using the TM-2 measuring device. The instrument reduces the index variability, simplifies and speeds up the measurement of hardness. The shape of the sample does not affect the accuracy of the instrument readings. The inherent disadvantages of the TM-2 measuring device are given as being: lack of objectivity of the hardness index measured with this device, since its value depends on the qualifications of the technicians; inability to measure small-sized rubber articles; too much variation in the hardness indices obtained. The TM-2-19 combines the advantages of the TM-2 and eliminates its shortcomings. The set-up of the instrument (Fig. 1) is checked along a smooth metal surface (8). The instrument is centered according to platform (9) prior to measuring the hardness, on rings or cylinders. By moving the inserted disk (4) and turning the cantilever (6), the needle of the

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Objective measurement of.....

instrument coincides with the aperture in platform (9), under depression of the handle (3). Depending on the shape of the sample, it is placed either on (8), (10) or (11) platform. By slow depression of the handle (3), the platform with the testing sample is elevated to the starting point of the load elevation, then the submersion depth of the needle is measured, counting the indications on the scale, given in relative units. When using the TM-2-19 instrument, the submersion depth of the needle is measured at the beginning of the load elevation, i.e., under constant pressure. Thus, the hardness measurement is objective. The new design has been introduced at the NIIRP laboratories, at the "Kauchuk" Plant, and the Orenburg Reclaiming Plant. There are 2 figures, 2 tables and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The reference to the most recent English-language publication reads as follows: 6) Rubb. Age, 81, No. 4, 687 (1957).

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

Card 2/3

S/190/62/004/009/010/014
B101/B144

AUTHORS: Bukhina, M. F., Gorelik, B. M.

TITLE: Thermomechanical properties of vulcanizates of crystallizing rubber

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 9, 1962, 1390-1393

TEXT: The effect of crystallization on the thermomechanical curves of vulcanized natural rubber was studied between 0 and -40°C by measuring the deformation at a pressure of 2.1 kg/cm. Results: (1) Keeping the sample at the experimental temperatures for 2 hrs was attended by deformation corresponding to glass transition. (2) When the sample was kept at the experimental temperatures for 17 or 48 hrs, crystallization took place and the deformation showed a minimum at -25°C, which is the temperature at which crystallization proceeds fastest. The higher the degree of crystallization, the broader the minimum. (3) The recovery curves too showed a minimum at -25°C. The effect of crystallization can be determined from $K_2 = K_1/K_o$, where K_1 is the over-all recovery and K_o

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the recovery during glass transition. There are 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

SUBMITTED: June 19, 1961

S/138/62/000/010/001/008
A051/A126

AUTHOR: Gorelik, B.M.

TITLE: Certain principles for the designing of molded-rubber machine parts

PERIODICAL: Kauchuk i rezina, no. 10, 1962, 7 - 14

TEXT: The most important principles for the designing of molded-rubber parts are given as follows: I. For rubber parts and units to be used under compression in one or two directions, their possible expansion in one or two other directions should be taken into account. An example is given in a figure. II. In rubber parts for compression, the relation between the hardness of the part and its shape and dimensions should be taken into account. III. To obtain more reliable and durable rubber machine parts, one should use rubber under compression rather than expansion. IV. To produce more pliable rubber power elements and shock absorbers, the design should be drawn up with the rubber being under shift. V. In constructing and designing rubber parts for conditions of repeated deformations, one should remember that $\frac{E_g}{E_c} > 1$, where E_g is the dynamic and E_c the static moduli of resilience. VI. The design of rubber

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Certain principles for the designing of ....

articles should take into account the relation of the resilience modulus to the temperature. VII. In constructing articles for conditions of repeated deformations, the dimensions of the rubber element should be selected so that under dynamic conditions there would not be too great a temperature increase. VIII. The degree of compression should be selected so that with a change in the contact pressure during operations and storage, it would not drop below the critical value. IX. To reduce the rate of drop of the contact tensions with a drop in temperature, self-sealing designs of rubber seals should be used where the rubber element would be under flexure rather than compression. X. In construction of rubber-metal hinges, the rubber element should not be subjected to thermal tensions when cooling off, or should be relieved of these to a maximum. XI. In many designs, the negative properties of rubbers can be utilized to produce positive results in the operational quality of the article. XII. Economic distribution of the material is important. For example, just the serration of the friction surface of a V-belt increases its service life by 2 to 3 times. In constructing rubber articles for conditions of dynamic loads, one should strive for a design of equal-tension articles, i.e., articles with tensions in any cross section being the same. XIII. In constructing rubber-metal parts the

Certain principles for the designing of ....

shape of the metal fixture should be selected so as to ensure equally-distributed tension in places of rubber-to-metal adhesion. XIV. A combination of materials should be used if the application of rubber cannot completely meet the demand of industry. Basic formulae for calculation of various parameters are given. There are 6 figures and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

Card 3/3

GORELIK, B.M.; RATNER, A.V.

Objective measurement of rubber hardness. Kauch.i rez. 21 no.3:41-43 Mr '62. (MIRA 15:4)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber--Testing) (Hardness--Measurement)

GORELIK, B.M.; RATNER, A.V.; BUKHINA, M.F.; KAPSHTYK, V.I.

Studying the testing butt joints and rubbers for asbestos cement water pipes. Kauch.i rez. 21 no.7:19-23 Jl '62. (MIRA 15:7)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Water pipes) (Rubber goods)

BUKHINA, M.F.; GORELIK, B.M.

Thermomechanical properties of crystallizing rubber vulcanizates. Vysokom.soed. 4 no.9:1390-1393 S '62. (MIRA 15:11)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

(Rubber) (Vulcanization) (Crystallization)

ACCESSION NR: AP4010254 S/0138/63/000/012/0029/0030

AUTHORS: Gerelik, B. M.; Fel'dman, G. I.

TITLE: Optically active rubber SKU-6

SOURCE: Kauchuk i rezina, no. 12, 1963, 29-30

TOPIC TAGS: rubber, optically active rubber, rubber SKU-6, elongation, compression, bending, stress, moment

ABSTRACT: Rubber SKU-6, developed by VNIISK, is amenable to investigation by the photoelastic method. It is optically active, transparent, physically stable, and loses its fogginess upon being heated to 50-60C. In studying its elongation, a strip 1 cm in breadth and 0.1 cm in height was subjected to static loads increasing by 100 g/sec. Elongations ε were calculated from the formula $\varepsilon = (l - l_n)/l_n$, where l_n is the original length, and l is the stretched length. Actual stresses σ were computed under the rule of constant volume from the equation $bhl = b_n h_n l_n$ = constant. Here bhl and $b_n h_n l_n$ represent the original and the stretched breadth, height and length. Experimental results are shown on Fig. 1 of Enclosure 1. Up to 60% elongation, the modulus of elasticity $E \approx 40.0$ kgs/cm^2.

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ACCESSION NR: AP4010254

Figure 2 of Enclosure 2 shows the relation of actual stresses and of the height to the nominal stresses σ_n. The photoelastic coefficient C is obtained from Wertheim's equation $\delta = Ch\sigma$. This coefficient is found to be constant and approximately equal to 2300 brewsters. Compression experiments were conducted on a disc 3.5 cm in diameter (D) and 0.6 cm high (h) acted upon by force (P) of 2.5 kg/sec. Unit compressive stress was calculated from

$$\sigma_0^{(1,0)} = \sigma_0^{(3,0)} \cdot 0{,}6 = 0{,}211 \text{ kgs/cm}^2$$

In bending tests a strip 1.0 x 0.6 cm in cross section was subjected to a moment of 0.2 kgs/cm. The stress on the extreme edges was found to be 2.0 kgs/cm^2 and the mean stress to be 0.36 kgs/cm^2. These experiments proved that rubber SKU-6 adapts itself readily to photoelastic investigations. Orig. art. has: 4 figures and 10 equations.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

SUBMITTED: 00	DATE ACQ: 03Feb64	ENCL: 02
SUB CODE: MA	NO REF SOV: 001	OTHER: 000

Card 2/4

GORELIK, B.M.; BUKHINA, M.F.; KRAYNOVA, L.A.; RATNER, A.V.

Regularities of the transition from deformation in rubber rings or end-bound rubber cylinders to the axial strain of the cylinder. Kauch.i rez. 22 no.2:25-27 F '63. (MIRA 16:2)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber—Testing)
(Strains and stresses)

GORELIK, B.M.; FEL'DMAN, G.I.

Investigating the stresses in the plane model of a rubber packing ring with a circular cross section. Kauch.i rez. 22 no.4:27-32 Ap '63. (MIRA 16:6)

1. Nauchno-issledovatel'skiy institut rezinovpy promyshlennosti.
(Strains and stresses) (Rubber goods--Testing)

GORELIK, B.M.; RATNER, A.V.

Measurement of the pressure on the contact of compressed rubber rings with the bonded metal elements. Kauch. i rez. 22 no.7: 24-25 Jl '63. (MIRA 16:8)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber goods--Testing)
(Packing (Mechanical engineering))

BOGAYEVSKIY, A.P.; GORELIK, B.M.; ZUYEV, Yu.S.; KUZ'MINSKIY, A.S.; NOVIKOV, A.S.

Some results of the research work conducted by the Scientific Research Institute of the Rubber Industry. Kauch. i rez. 22 no.11: 1-10 N '63. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

L 17563-65 EWT(m)/EWP(j) Pc-4 RM
ACCESSION NR: AP4049782 S/0138/64/000/011/0013/0018

AUTHOR: Gorelik, B. M.; Marey, A. I.; Bukhina, M. F.; Novikova, G. Ye.; Pomirchaya, B. A.

TITLE: Effect of carbon-black filler on rubber crystallization

SOURCE: Kauchuk i rezina, no. 11, 1964, 13-18

TOPIC TAGS: rubber crystallization, natural rubber, synthetic rubber, carbon black filler, polysulfide crosslink, monosulfide crosslink rubber elasticity

ABSTRACT: The literature on the effect of fillers is sparse and contradictory [illegible] only to natural rubber. This work is an attempt to expand the knowledge [illegible] synthetic rubbers. Two methods of investigation were used - a study of the crystallization of rubbers in the free state by the dilatometric method, and a study of deformed rubbers from the point of view of recoverability. A comparison was made of the kinetics obtained by the dilatometric methods those obtained from the change in [illegible] kinetics of crystallization of natural rubber were studied at -25C, those [illegible] SKI-3 at -25C and of rubber SKN at -28, -45, and -56C. Data on [illegible] formed rubbers [illegible] on the basis of the formula $\lg \tau_{1/2} - \lg \tau'_{1/2} = B$ [illegible]

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L 17563-65
ACCESSION NR: AP4049782

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where $\lg\tau_{1/2}$ is the log of the half-period of crystallization, $\lg\tau^0$ ... is the ... by the straight line on the ... axis and corresponds to the half time of ... sample ... crystallization and has a magnitude shown ... straight line ... the tangent of the angle of the ... distressed rubbers ... the ... crystallizing ... content. The same ... formation (compression). The influence ... pends on the type of transverse links. For natural rubber and SKI-3 with ... content of ... filling affects crystallization analogously. ... has 5 figures, 1 table and 1 formula.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promy*shlennosti (Scientific Research Institute for the Rubber Industry); Vsesoyuzny*y nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute for Synthetic Rubber)

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 004 OTHER: 004

Card 2/2

GORELIK, B.N.; GANELINA, S.A.; NIKITIN, G.N.; TIKHONOVICH, L.V.

New heat and oil resistant rubber for the supports of turbodrills. Neft. khoz. 42 no.12:11-14 D '64. (MIRA 18:2)

GORELIK, B.M.; GORBUNOV, P.M.; BUKHINA, M.F.

Visual observation of crystalline formations in polychloroprene rubber. Vysokom.soed. 6 no.2:321-322 F '64. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

GORELIK, B.M.; FEL'DMAN, G.I.

Optically active SKU-6 (isoprene synthetic rubber) rubber.
Kauch. i rez. 22 no.12:29-30 D '63. (MIRA 17:9)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

GORELIK, B.M.; FEL'DMAN, G.I.

Failure of rubber packing rings of circular cross section under the effect of stresses. Kauch. i rez. 23 no.4:19-21 Ap'64 (MIRA 17:7)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

GORELIK, B.M.

Cylindrical rubber-metal hinged joints. Kauch. i rez. 23 no.10: 24-32 O '64. (MIRA 18:2)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

GORELIK, B.M.; FEL'DMAN, G.I.; ROMANOV, G.I.; Prinimal uchastiye LOGINOV, B.G.

Study of the state of stress and stability of lamellar rubber-metal shock absorbers. Kauch. i rez. 24 no.6:15-19 Je '65. (MIRA 18:7)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

L 29115-65 EWT(m)/EWP(j) Pc-4 RM

ACCESSION NR: AP5005393 S/0138/65/000/002/0020/0021

AUTHORS: Gorelik, B. M.; [illegible]

TITLE: The effect of the vulcanizing group and the addition of noncrystal... rubber on the crystallization of/cured ... from natural rubber

SOURCE: Kauchuk i rezina, no. 2, 1965, 20-21

TOPIC TAGS: rubber, vulcanization

ABSTRACT: The authors investigated the effect of vulcanization [illegible] the shape of the characteristic stress-strain [illegible] may [illegible] crystallization, [illegible] describes the crystallization process of rubber [illegible] rubber that has predominant polysulfide bonds [illegible] greatly [illegible]

Card 1/3

L 29115-65

ACCESSION NR: AP5005193

increase in lattice dens[illegible]. For rubber [illegible]
rubber [illegible] peroxide [illegible]
parameter b increases with increase in lattice [illegible]
but [illegible]

[illegible]

ASSOCIATION: Kauchuk-i[illegible]

SUBMITTED: 00 ENCL: 01 SUB CODE:

NO REF SOV: 005 OTHER: 002

Card 2/3

L 29115-65

ACCESSION NR: AP5005393

ENCLOSURE:

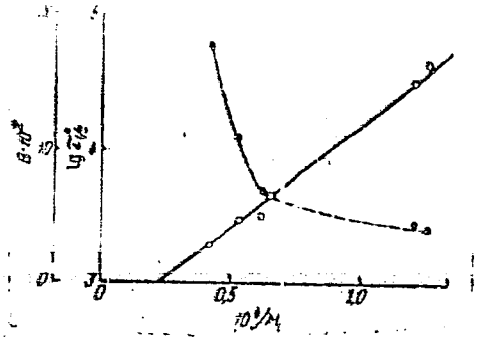


Fig. 1. Dependence of parameters of the characteristic line log (solid line) and B (dashed line) at -25C on the lattice density for rubber with predominant polysulfide bonds.

Card 3/3

L 23222-66 EWT(d)/EWT(1)/EWT(m)/EWP(v)/EWP(j)/T/EWP(k)/EWP(h)/EWP(l) LIP(c)
ACC NR: AP6013595 WW/DJ/RM SOURCE CODE: UR/0138/65/000/004/0021/0023

AUTHOR: Gorelik, B. M.; Fel'dman, G. I.

ORG: Scientific Research Institute of the Rubber Industry (Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti)

TITLE: Investigation of the strength of rubber-metal valves

SOURCE: Kauchuk i rezina, no. 4, 1965, 21-23

TOPIC TAGS: rubber, valve, Poisson coefficient, tensile stress/SKU-6-rubber

ABSTRACT: The rubber-metal valve is a rubber ring rectangular in cross section, cemented along its base and two sides to a metal mounting. A vertical force P acts on the supporting surface of the valve, the force being transmitted by means of the metallic seat embedded in the rubber. The stresses emerging account for the hermeticity of the system. However, the stresses can produce breakdown of the rubber ring. In particular, during use, shallow cracks appear on the supporting surface of rubber-metal seals. To discover the causes for these cracks, the stressed state of two models of valves with different shape of supporting surface was examined. The main stresses σ_1 and σ_2 in the plane of the model were determined from a picture of poles and isoclines, and the stress σ_3 perpendicular to the plane of the model from the formula: $\sigma_3 = \mu(\sigma_1 + \sigma_2)$

Card 1/2 UDC: 678.06: 621-762: 678.01: 539.4

L 23222-66
ACC NR: AP6013595

where μ = Poisson coefficient of the rubber. The models studied were made of the optically active SKU-6 rubber of thickness h = 0.47 cm. The depth of the groove b = 5 cm, width a = 8 cm. It was found that in the proposed design of a rubber-metal valve with a convexity on the free surface and a loaded flat seat practically no tensile stresses emerge along the contour. A valve with a convex surface is stronger than a valve with a flat surface and convex seat. Orig. art. has: 6 figures and 4 formulas. [JPRS]

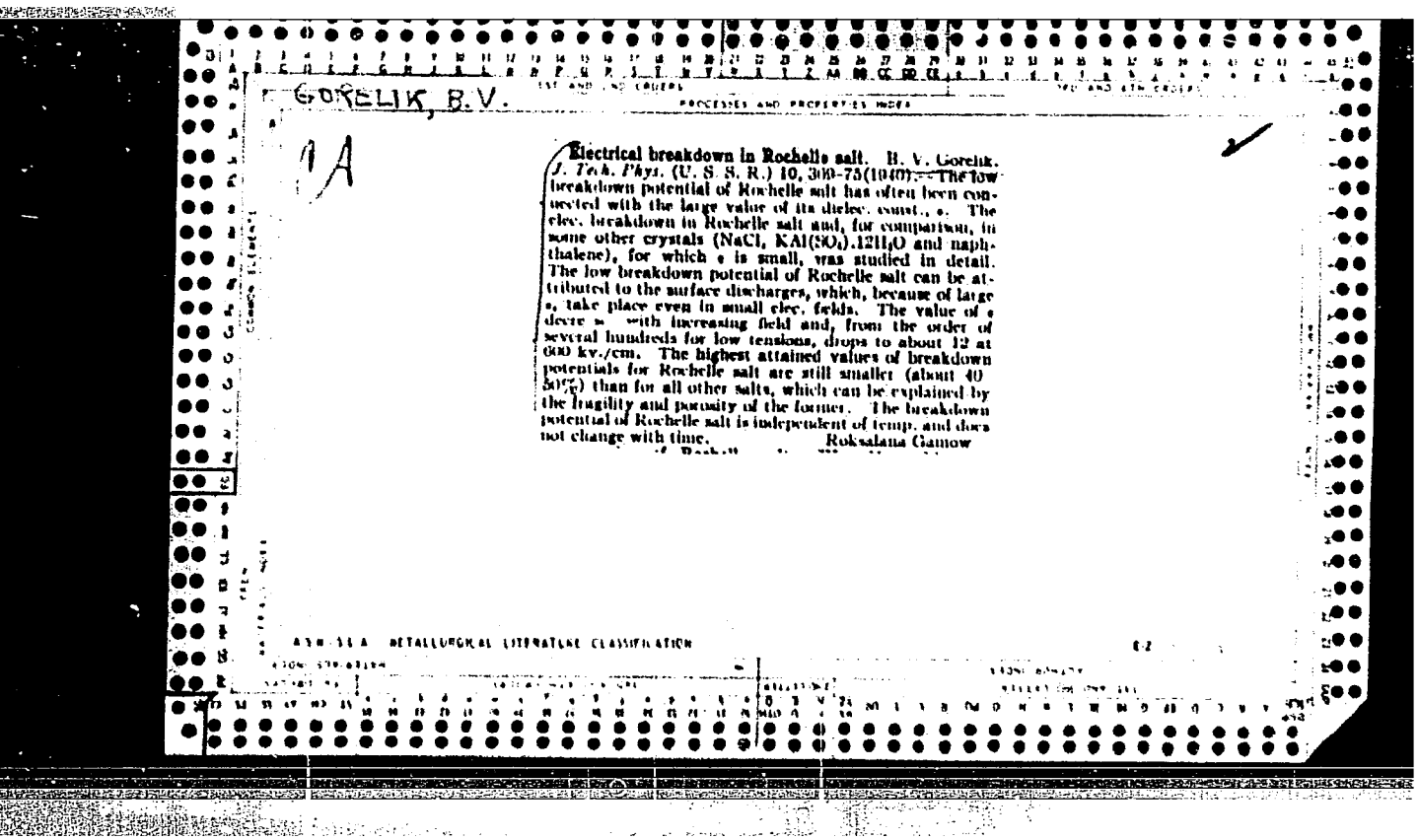
SUB CODE: 13, 20 / SUBM DATE: none

Card 2/2

GORELIK, B.M.; BUKHINA, M.F.; KRAYNOVA, L.A.; RATNER, A.V.

Studying the compression of round cross-section sealing rings with lubricated surfaces. Kauch. i rez. 24 no.8:21-24 '65.
(MIRA 18:10)

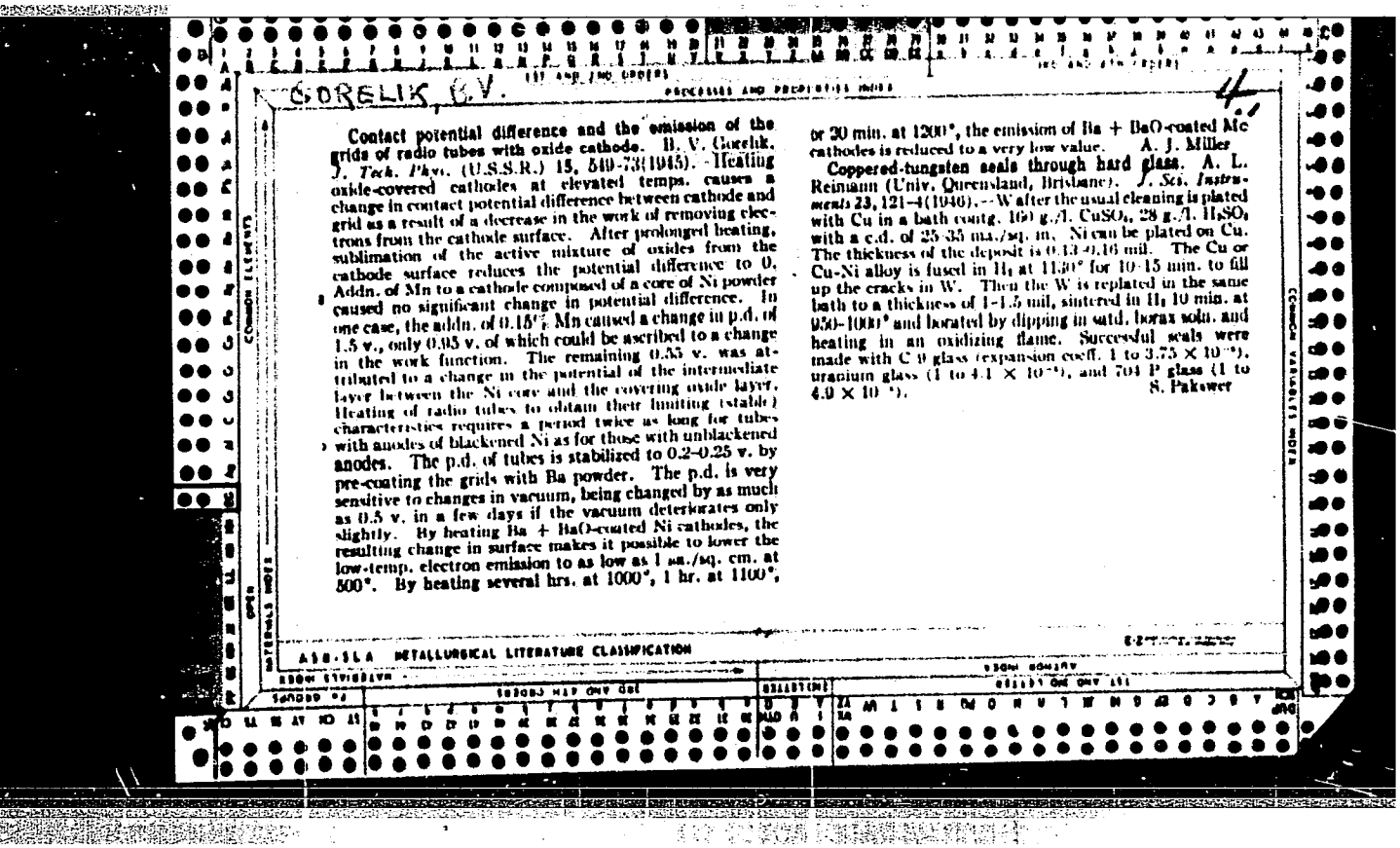
1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.



GORELIK, B.V.

1A

Electrical breakdown in Rochelle salt. B. V. Gorelik. *J. Tech. Phys.* (U. S. S. R.) 10, 369-75(1940).—The low breakdown potential of Rochelle salt has often been connected with the large value of its dielec. const., ε. The elec. breakdown in Rochelle salt and, for comparison, in some other crystals (NaCl, $KAl(SO_4).12H_2O$ and naphthalene), for which ε is small, was studied in detail. The low breakdown potential of Rochelle salt can be attributed to the surface discharges, which, because of large ε, take place even in small elec. fields. The value of ε decre s with increasing field and, from the order of several hundreds for low tensions, drops to about 12 at 600 kv./cm. The highest attained values of breakdown potentials for Rochelle salt are still smaller (about 40-50%) than for all other salts, which can be explained by the fragility and porosity of the former. The breakdown potential of Rochelle salt is independent of temp. and does not change with time. Roksalana Gamow



GORELIK, G.V.

Contact potential difference and the emission of the grids of radio tubes with oxide cathode. B. V. Gorelik. *J. Tech. Phys.* (U.S.S.R.) 15, 549-73(1945). Heating oxide-covered cathodes at elevated temps. causes a change in contact potential difference between cathode and grid as a result of a decrease in the work of removing electrons from the cathode surface. After prolonged heating, sublimation of the active mixture of oxides from the cathode surface reduces the potential difference to 0. Addn. of Mn to a cathode composed of a core of Ni powder caused no significant change in potential difference. In one case, the addn. of 0.15% Mn caused a change in p.d. of 1.5 v., only 0.95 v. of which could be ascribed to a change in the work function. The remaining 0.55 v. was attributed to a change in the potential of the intermediate layer between the Ni core and the covering oxide layer. Heating of radio tubes to obtain their limiting (stable) characteristics requires a period twice as long for tubes with anodes of blackened Ni as for those with unblackened anodes. The p.d. of tubes is stabilized to 0.2-0.25 v. by pre-coating the grids with Ba powder. The p.d. is very sensitive to changes in vacuum, being changed by as much as 0.5 v. in a few days if the vacuum deteriorates only slightly. By heating Ba + BaO-coated Ni cathodes, the resulting change in surface makes it possible to lower the low-temp. electron emission to as low as 1 ma./sq. cm. at 800°. By heating several hrs. at 1000°, 1 hr. at 1100°, or 30 min. at 1200°, the emission of Ba + BaO-coated Mo cathodes is reduced to a very low value. A. J. Miller

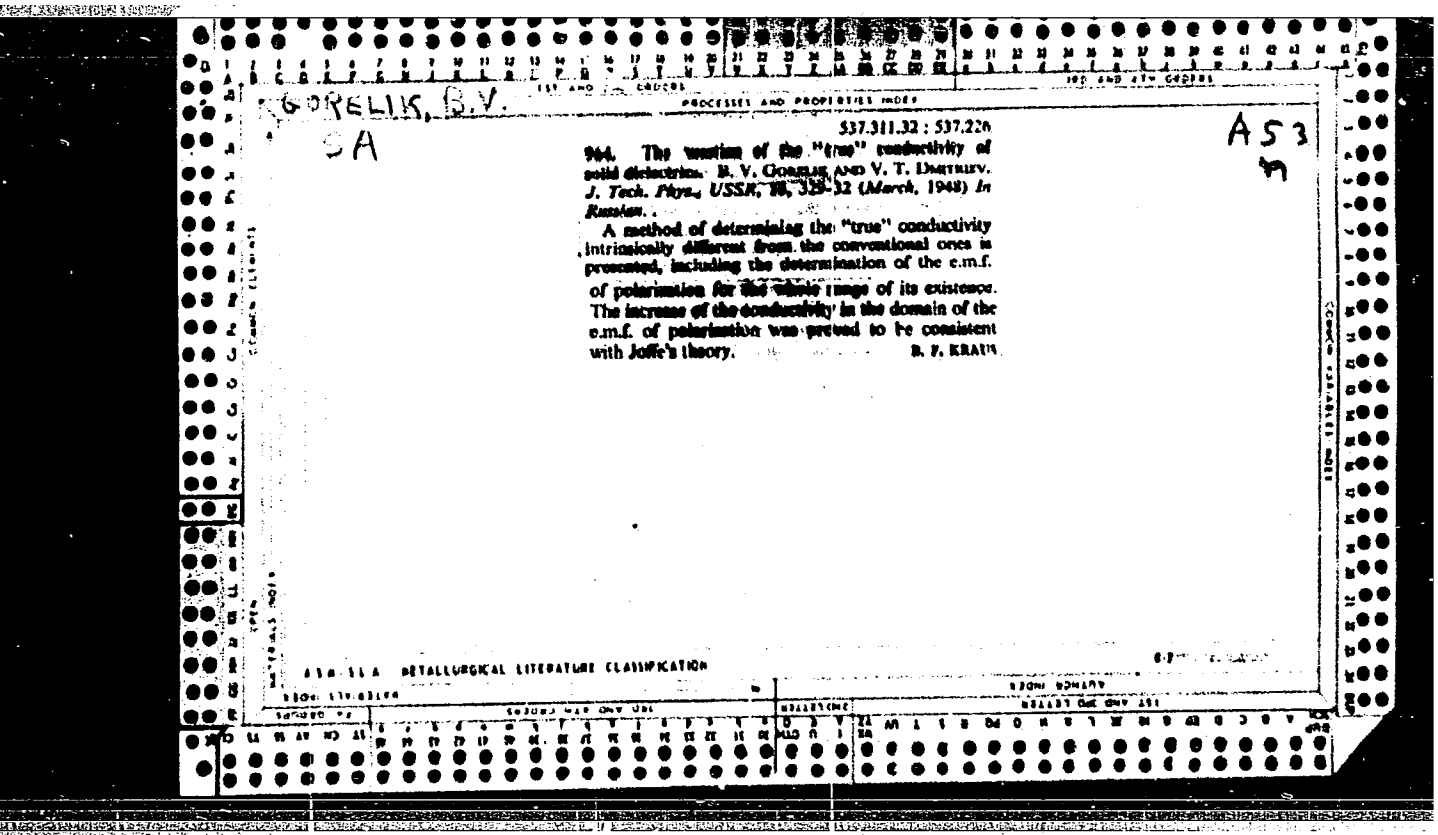
Coppered-tungsten seals through hard glass. A. L. Reimann (Univ. Queensland, Brisbane). *J. Sci. Instruments* 23, 121-4(1946).—W after the usual cleaning is plated with Cu in a bath contg. 160 g./l. $CuSO_4$, 28 g./l. H_2SO_4 with a c.d. of 25-35 ma./sq. in. Ni can be plated on Cu. The thickness of the deposit is 0.13-0.16 mil. The Cu or Cu-Ni alloy is fused in H_2 at 1130° for 10-15 min. to fill up the cracks in W. Then the W is replated in the same bath to a thickness of 1-1.5 mil, sintered in H_2 10 min. at 950-1000° and borated by dipping in satd. borax soln. and heating in an oxidizing flame. Successful seals were made with C 9 glass (expansion coeff. 1 to 3.75×10^{-6}), uranium glass (1 to 4.1×10^{-6}), and 704 P glass (1 to 4.9×10^{-6}). S. Pakswer

A58-SLA METALLURGICAL LITERATURE CLASSIFICATION

GORELIK, B. V. and GERSHT, Ye. P.

"Thermistors and Their Use in Meteorology," Meteorologiya i Gidrologiya, No 5, 1948, pp 88-93.

Digest W-15311, 27 Nov 50



GORELIK, B.V.

SA

A53

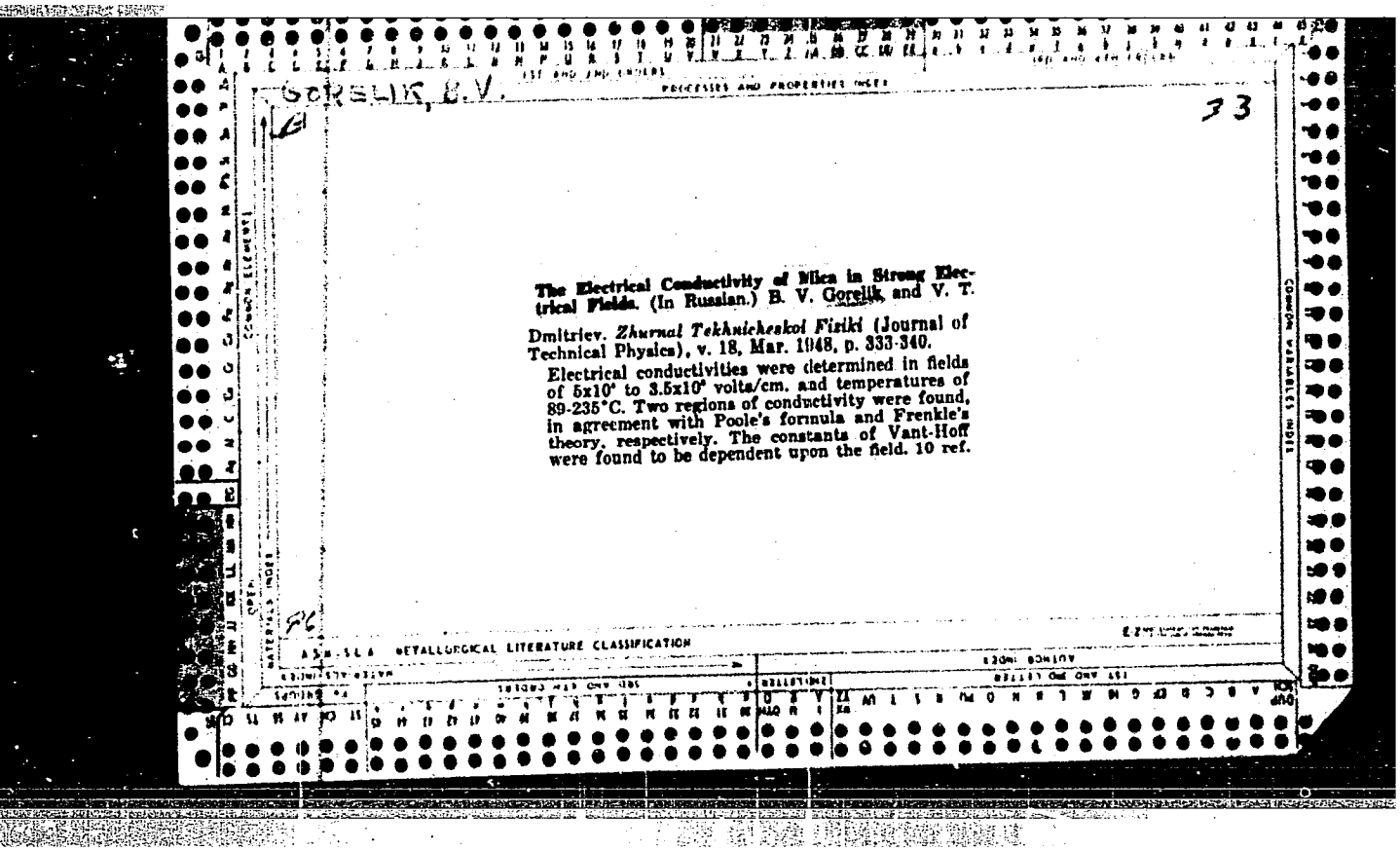
PROCESSES AND PROPERTIES INDEX

537.311.32 : 537.226

964. The question of the "true" conductivity of solid dielectrics. B. V. Gorelik and V. T. Dmitriev. *J. Tech. Phys., USSR*, 18, 325–32 (*March*, 1948) *In Russian*.

A method of determining the "true" conductivity intrinsically different from the conventional ones is presented, including the determination of the e.m.f. of polarization for the whole range of its existence. The increase of the conductivity in the domain of the e.m.f. of polarization was proved to be consistent with Joffe's theory. B. Y. KRAUS

A53-11A METALLURGICAL LITERATURE CLASSIFICATION



GORELIK, B.V.

33

The Electrical Conductivity of Mica in Strong Electrical Fields. (In Russian.) B. V. Gorelik and V. T. Dmitriev. *Zhurnal Tekhnicheskoi Fiziki* (Journal of Technical Physics), v. 18, Mar. 1948, p. 333-340.

Electrical conductivities were determined in fields of 5×10^4 to 3.5×10^5 volts/cm. and temperatures of 89-235°C. Two regions of conductivity were found, in agreement with Poole's formula and Frenkle's theory, respectively. The constants of Vant-Hoff were found to be dependent upon the field. 10 ref.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

GORELIK, B.V.

GORELIK, B.V., dotsent, kandidat tekhnicheskikh nauk; LEVINZON, A.Z., dotsent, kandidat tekhnicheskikh nauk [deceased]; YUDOVINA, S.A., assistent.

Electric and optical hygrometer. Elektrichestvo no.1:80-82 Ja '49. (Hygrometry) (MLRA 7:10)

GORELIK, B. V.

PA 24/49T108

USSR/Physics
Electric Conductivity
Dielectrics

Jan 49

"All-Union Scientific Technical Session on Electric Insulation," B. V. Gorelik, 3 pp

"Zhur Tekh Fiz" Vol XIX, No 1

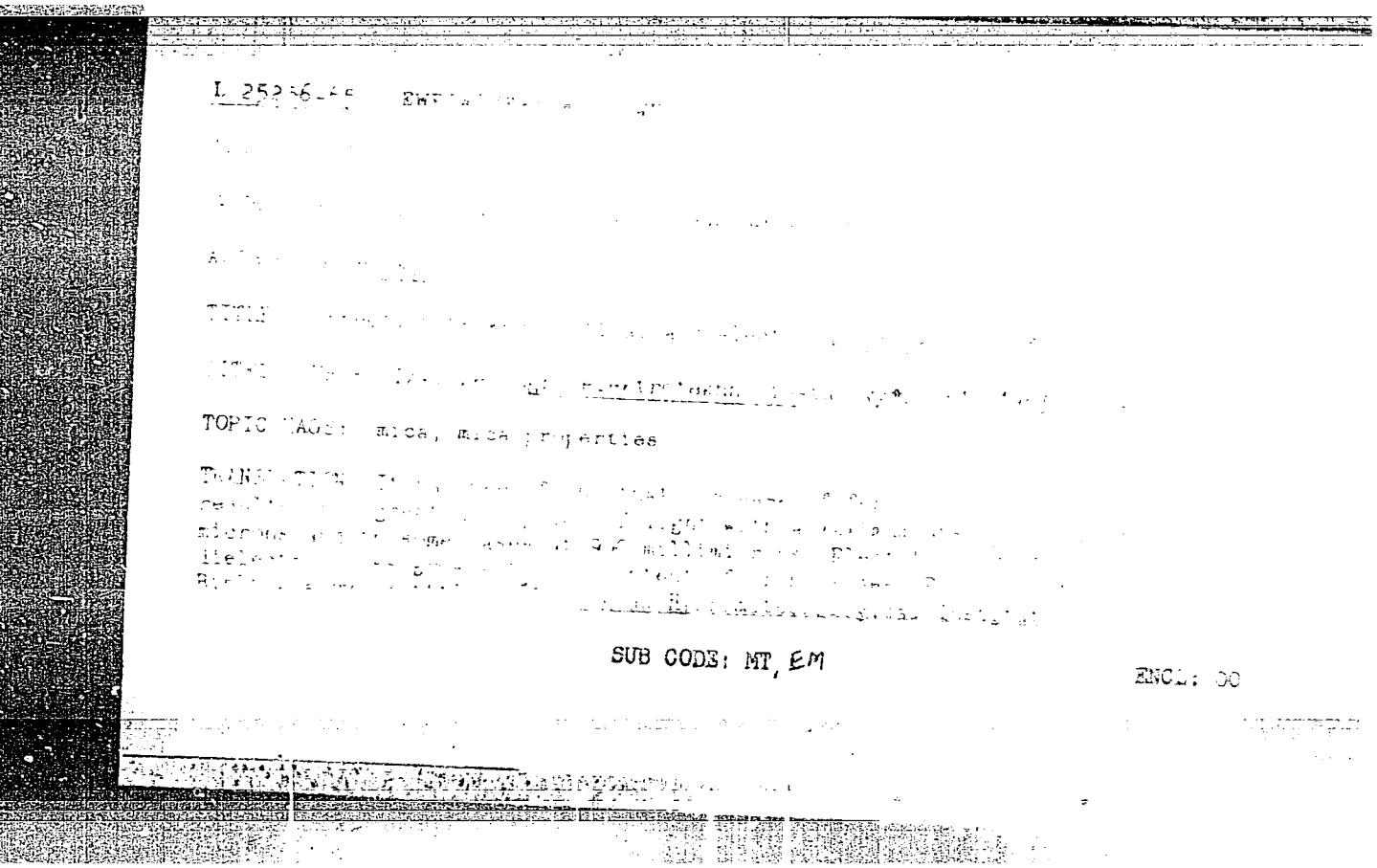
Session was held in Leningrad 4-8 Oct 48. Main emphasis was on the physics of dielectrics. Thirteen reports were submitted on this subject, four discussing electroconductivity of solid dielectrics, and six on polarization, dielectric losses, and calculation of dielectric permeability.

24/49T108

GORELIK, B.V.; GERSHT, Ye.P.

On the possible application of thermistors for the measurement of certain hydrometeorolcgical quantities. Sbor.trud.Len.Gidrometeorol.inst. no.2:55-70 '50. (MLRA 6:8)

(Thermistors) (Meteorology)



L 25256-65 EWT

TOPIC TAGS: mica, mica properties

SUB CODE: MT, EM

ENCL: 00

GRYBENBLAT, V.A.; GORELIK, D.A.

Deoxidation and alloying of carbon steels. Metallurg 10 no.8:17-18 Ag '65. (MIRA 18:8)

1. Dnepropetrovskiy zavod pressov.

GORELIK, D.G.; KIREYEV, B.N.

Effect of the inclination on the readings of a single-phase electric meter. Izm.tekh. no.3:38-40 Mr '62. (MIRA 15:2)
(Electric meters--Testing)

GORELIK, D.S.; KAZAKOVA, O.A.

Determining the degree of rinsing of milori blue. Lakokras. mat. i ikh prim. no.5:79-80 '61. (MIRA 15:3)
(Prussian blue)

GORELIK, D.S.; MASLOVA, L.N.

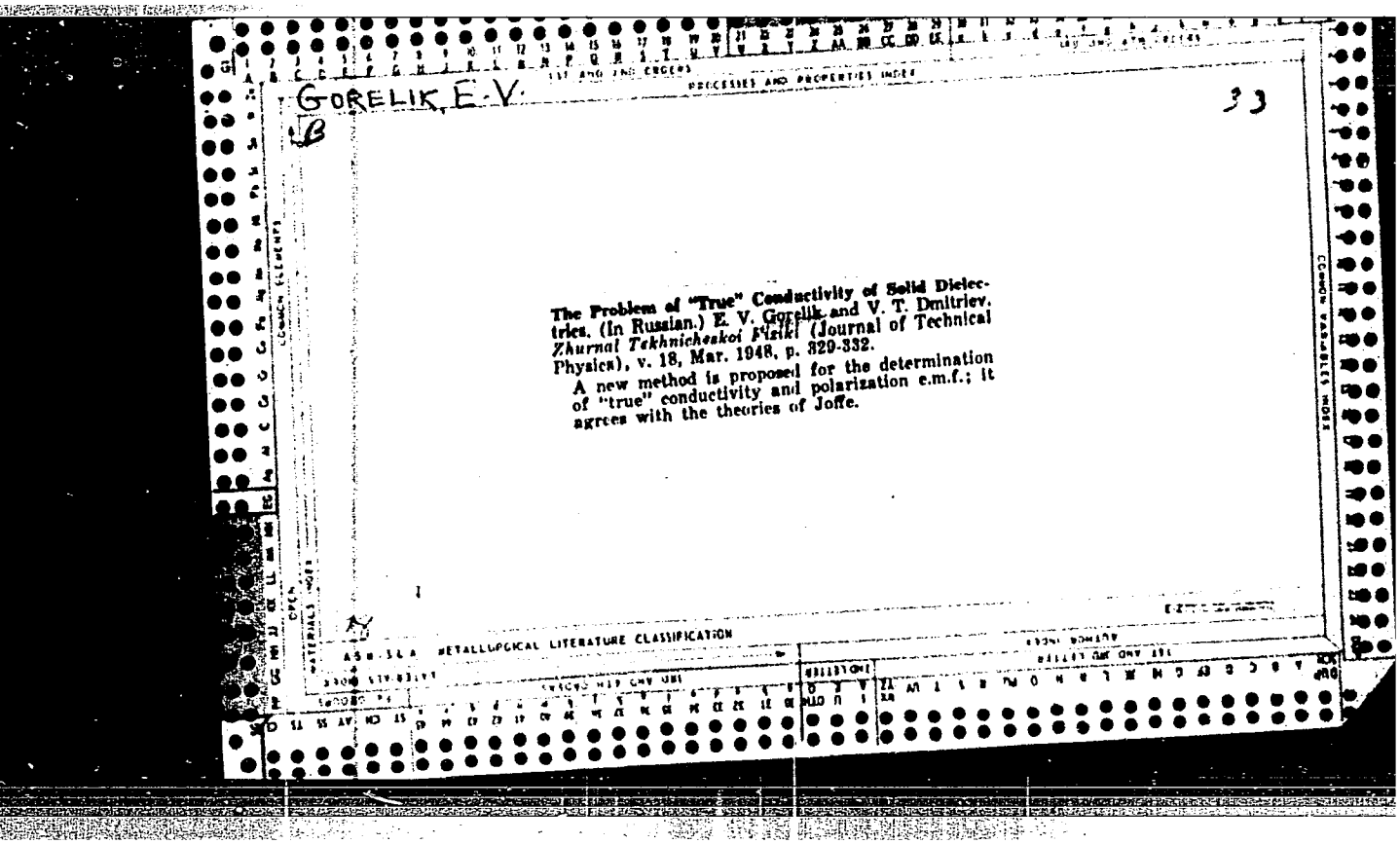
Investigating some factors affecting the properties of milori blue. Lakokras. mat. i ikh prim. no.3:78 '63. (MIRA 16:9)
(Pigments)

GORELIK, D.S.; KAZAKOVA, O.A.

Method for determining metallic zinc in zinc oxide prepared in rotating furnaces. Lakokras. mat. i ikh prim. no.5:50-51 '63. (MIRA 16:11)

VOLIN, Mikhail Lazarevich; GORELIK, E.M., red.

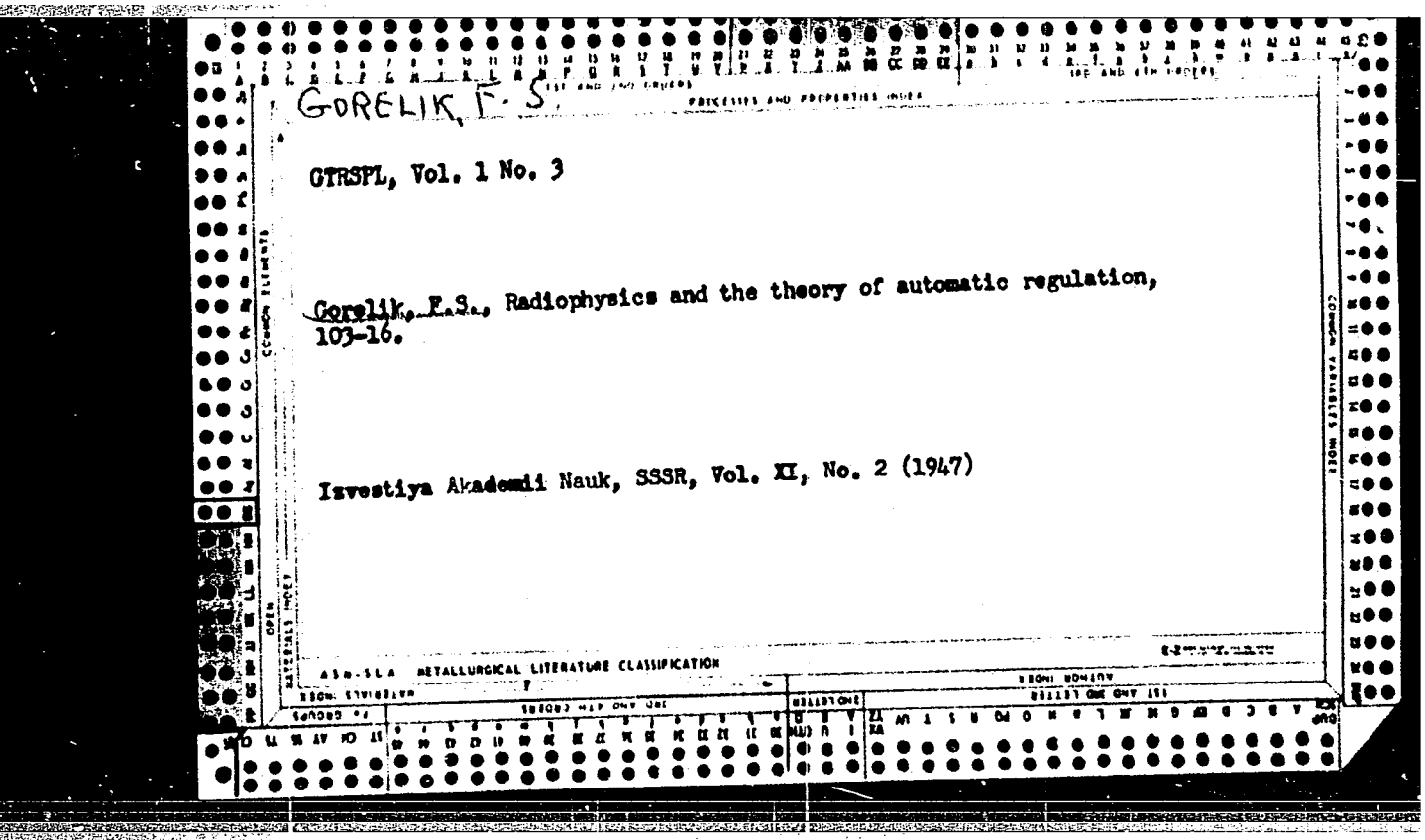
[Stray couplings and induction] Parazitnye sviazi i navodki. Moskva, Sovetskoe radio, 1965. 231 p. (MIRA 18:9)



GORELIK, E.V.

The Problem of "True" Conductivity of Solid Dielectrics. (In Russian.) E. V. Gorelik and V. T. Dmitriev. *Zhurnal Tekhnicheskoi fiziki* (Journal of Technical Physics), v. 18, Mar. 1948, p. 329-332.

A new method is proposed for the determination of "true" conductivity and polarization e.m.f.; it agrees with the theories of Joffe.



GORELIK, F. S.

GTRSPL, Vol. 1 No. 3

Gorelik, F.S., Radiophysics and the theory of automatic regulation, 103-16.

Izvestiya Akademii Nauk, SSSR, Vol. XI, No. 2 (1947)

AYZMAN, D.S., inzh.; GORELIK, G.I., inzh.; KUZNETSOV, V.P., kand. tekhn. nauk

Technological potentialities of machine-tool units manufactured at the Minsk Automatic-Line Plant. Mash. Bel. no.2:3-21 '60. (MIRA 16:7)

(Minsk--Machine tools)
(Automation)

GORELIK, G.I.; PIROVICH, L.Ya.

Standardization of units and parts promotes the improvement of machinery. Standartizatsiia 29 no.6:14-16 Je '65. (MIRA 18:12)

SHTERN, M.A.; GORELIK, G.N.

Continuous method for the production of lead chromates. Lakokras. mat. i ikh prim. no.2:50-55 '60. (MIRA 14:4)

1. Leningradskiy filial Gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta No.4.
(Lead chromate)

SHTERN, M.A.; GORELIK, G.N.

Purification of waste waters from the production of zinc and lead chromates by the post-precipitation method. Report 1. Lakokras. mat. i ikh prim. no. 6:34-38 '60. (MIRA 13:12)
(Sewage--Purification) (Lead chromate) (Zinc chromate)

SHTERIN, M.A.; GORELIK, G.N.

Method of ion exchange in the purification of waste waters from the manufacture of zinc and lead chromates. Report 2. Lakokras. mat.i ikh prim. no.1:41-46 '61. (MIRA 14:4)

(Sewage--Purification) (Ion exchange)
(Zinc chromate) (Lead chromate)

YERMAKOVA, G.A.; SHTERN, M.A.; GORELIK, G.N.

Effect of the physical characteristics of white pigments and fillers on the properties of paint films. Lakokras. mat. i ikh. prim. no.4:70-84 '61. (MIRA 16:7)

(United States—Pigments)
(United States—Fillers(In paper, paint, etc.)

KOST'YANOVSKIY, I.A.; PRILUTSKIY, G.Ya.; SHTERN, M.A.; GORELIK, G.N.; REZKOVA, F.I.

Introducing a new method for the production of zinc oxide for needs of the paint and other branches of industry. A.K. Evdokimova, M.V.Potapov, A.K.Shakhnazarov. Remarks by I.A. Kostianovskii and others. Authors' response. TSvet.met. 35 no.12:69-72 D '62. (MIRA 16:2)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy nikelevoy promyshlennosti (for Kost'yanovskiy, Prilutskiy). 2. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut lakokrasochnoy promyshlennosti (for Shtern, Gorelik). 3. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy promyshlennosti tsvetnoy metallurgii (for Rezkova).
(Zinc oxide) (Evdokimova, A.K.)
(Potapov,M.V.) (Shakhnazarov,A.K.)

RAVDEL', A.A.; GORELIK, G.N.

Device for investigating the process of dissolution by a method of rotating disk. Zhur.prikl.khim. 37 no.1:65-69 Ja '64. (MIRA 17:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta i Leningradskiy filial nauchno-issledovatel'skogo i proyektnogo instituta lakokrasochnoy promyshlennosti.

RAVDEL', A.A.; GORELIK, G.N.

Study of the kinetics of lead dissolution in nitric acid by the rotating disk method. Zhur. prikl. khim. 37 no.2:275-285 F '64. (MIRA 17:9)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta i Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut mineral'nykh pigmentov.

RAVDEL', A.A.; GORELIK, G.N.

Kinetics of the dissolution of lead in lead nitrate solutions. Zhur. prikl. khim. 37 no. 4:778-784 Ap '64. (MIRA 17:5)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta i Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut mineral'nykh pigmentov.

LIMAR', T.F.; UVAROVA, K.A.; BULACHEVA, A.F.; SGYVUBM, A.S.; BEDNOVA, I.N.; MAKOVSKAYA, E.B.; SOLOMEINA, G.I.; DOLMATOV, Yu.D.; BOBYRENKO, Yu. Ya.; KOGAN, F.I.; KOVALENKO, P.N.; IVANOVA, Z.I.; FOKIN, A.V.; KOMAROV, V.A.; SOROCHKIN, I.N.; DAVYDOVA, S.M.; RAVDEL', A.A.; GORELIK, G.N.; DAUKSHAS, V.K. [Dauksas, V.]; PIKUNAYTE, L.A. [Pikunaite, L.]; SHARIPOV, A.Kh.; SHABALIN, I.I.; STEPNOVA, G.M.; SHMIDT, Ye.V.; DUBOV, S.S.; STRUKOV, O.G.

Scientific research papers of the members of the All-Union Mendeleev Chemical Society (brief information). Zhur. VHKO 10 no.3:350-360 '65. (MIRA 18:8)

1. Donetskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv (for Limar', Uvarova, Bulacheva). 2. Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut (for Shubin, Bednova, Makovskaya, Solomeina). 3. Chelyabinskiy filial Gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta mineral'nykh pigmentov (Dolmatov, Bobyrenko). 4. Rostovskiy-na-Donu universitet (for Kogan, Kovalenko, Ivanova). 5. Leningradskiy tekhnologicheskiy institut imeni Lensoveta i Institut mineral'nykh pigmentov (for Ravdel', Gorelik). 6. Vil'nyusskiy gosudarstvennyy universitet imeni Kpsukasa (for Daukshas, Pikunayte). Nauchno-issledovatel'skiy institut neftekhimicheskikh proizvodstv (for Sharipov, Shabalin). 8. Tomskiy politekhnicheskiy institut imeni Kirova (for Stepnova, Shmidt).

GORELIK, I.

Shipment of perfumes and cosmetics without wrapping. Sov. torg. no.2: 16-18 F '58. (MIRA 11:1)

1. Yuriskonsul't Leningradskoy oblastnoy bazy Glavgalanterei.
(Shipment of goods) (Cosmetics)

GORELIK, I.; ZHITOMIRSKIY, E.

Quality of merchandise inspections. Sov.torg. no.4:37-40 Ap '59. (MIRA 12:6)

(Commercial products--Testing)

YEREMENKO, Viktor Yemel'yanovich, doktor sel'khoz. nauk, prof. [deceased]; GORELIK, I., red.

[Failure of the grassland farming system] O nesostoiatel'nosti travopol'noi sistemy zemledeliia. Tashkent, Gosizdat UzSSR, 1963. 65 p. (MIRA 17:4)

GORELIK, I.A., (g. Sverdlovsk).

Engineer-innovator. Elek. i topl. tiaga no.4:31-32 Ap '57.
(Vladykin, Viktor Efimovich) (MLRA 10:6)

GORELIK, I. A.

In an advanced electric railroad station. Elek. i tepl. tiaga 2 no.7:3-4 Jl '58. (MIRA 11:7)
(Panki--Electric railroads--Stations)

GORELIK, I.A., inzh.

In the experimental section of the Office of Planning and Design of Diesel Locomotives of the Ministry of Railroads. Elek. i tepl. tiaga 2 no.8:30-31 Ag '58. (MIRA 11:9)
(Railroad research)

BELYAVSKIY, I.Yu., inzh.; GORELIK, I.A., inzh.

Make more extensive use of synthetic materials in locomotive maintenance. Elek.i tepl.tiaga 3 no.5:4-5 My '59.
(MIRA 12:9)
(Locomotives--Maintenance and repair)
(Synthetic products)

RAKOV, Vitaliy Aleksandrovich; KALININ, S.S., inzh., retsenzent; SUSLOV, B.V., inzh., retsenzent; NAKHODKIN, M.D., kand. tekhn. nauk, retsenzent; FAMINSKIY, G.V., kand.tekhn. nauk, retsenzent; ROGOVA, Ye.N., inzh., retsenzent; KRYLOV, V.I., inzh., retsenzent; NOVIKOV, V.N., inzh., retsenzent; GORELIK, I.A., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Series ChS2 electric locomotive for passenger trains] Passazhirskii elektrovoz serii ChS2. Moskva, Transzheldorizdat, 1963. 359 p. (MIRA 17:1)

GORELIK, I.G. DECEASED 14

C' 1961

SEE ILC.

METALLURGY

BONDARENKO, Margarita Nikolayevna; GORELIK, I.M., red.; ABBASOV, T., tekhn. red.

[Communist brigade from the "Kzyl Uzbekistan" Collective Farm, Tashkent Province, Ordzhonikidze District] Kommunisticheskaia iz "Kzyl Uzbekistana"; Tashkentskaia oblast', Ordzhonikidzevskii raion, kolkhoz "Kzyl Uzbekistan." Tashkent, Gos.izd-vo Uzbekskoi SSR, 1962. 42 p. (MIRA 16:6)
(Uzbekistan—Cotton growing)

BEDROSOV, Yuriy Yakovlevich; SUDARS, Lev Petrovich; GORELIK, I.M., red.; ABRASOV, T., tekhn. red.

[Aeronautics in agriculture] Aviatsiia v sel'skom khoziaistve. Tashkent, Gosizdat UzSSR, 1962. 48 p. (MIRA 16:4)
(Uzbekistan--Aeronautics in agriculture)

TSAMUTALI, Aleksandr Sergeyevich; GORELIK, I.M., red.; ABBASOV, T., tekhn. red.

[Strengthening the economy of cotton-growing collective farms] Ukreplenie ekonomiki khlopkovodcheskikh kolkhozov. Tashkent, Gosizdat UzSSR, 1962. 68 p. (MIRA 16:5)
(Uzbekistan--Collective farms--Finance)
(Uzbekistan--Cotton growing)

KOTIKOVA, Vera Nikolayevna; GORELIK, I.M., red.; ABBASOV, T., tekhn. red.

[Monetary wages on cotton-raising collective farms] Denezhnaia oplata truda v khlopkovodcheskikh kolkhozakh. Tashkent, Gosizdat UzSSR, 1963. 72 p. (MIRA 17:1)

ZAKIROV, Tadzhitdin Salidzhanovich, kand. sel'khoz. nauk; GORELIK, I.M., red.; ABBASOV, T., tekhn. red.

[Chemical defoliation and desiccation of cotton] Khimicheskoe udalenie list'ev i vysushivanie khlopchatnika. Tashkent, Gosizdat UzSSR, 1962. 81 p. (MIRA 17:1)
(Cotton--Harvesting) (Defoliation)

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